

*** NETANSWERS INTERNET EXTRA ***
*** Number 36: Distributed Computing ***

What does your computer do when you're not using it? Maybe it just displays pretty screensaver graphics? You can make your computer do something productive during its copious spare time with the help of the Internet and "distributed computing". It's kinda nerdy... but fun.

-.-.- Distributed Computing -.-.-

Let me be frank: this issue's topic crosses the line into nerd territory. Although distributed computing might not make tantalizing dinner conversation (unless, of course, you dine with other nerds) it is an interesting use of the Internet -- and a worthwhile use of your computer's spare time.

Distributed computing simply means breaking a huge computational task into small parts and doling out bits of work to different computers. After all, why use a million dollar supercomputer when you can do a job with a bunch of cheapo PCs? That's not too exciting by itself: scientists and big businesses have been doing this for years.

What's interesting, and relatively new, is this: several projects have sprung up that use the Internet for distributed computing. Anyone who uses the Internet can participate, lending their computer's free time to help solve a complex problem.

The most popular distributed computing project is Distributed.net (<http://www.distributed.net>) which tries to break encryption. (There's nothing nefarious about it -- the companies that make encryption technologies often have contests to see if they can be cracked.) Distributed.net's participants have succeeded in cracking two different codes so far (and as I write this, are days away from a third). In the contests that Distributed.net is working on, you will win money if your computer finds the secret key. Plus, a portion of the prize money goes to charity.

Another project is the Great Internet Mersenne Prime Search, which seeks to discover very large prime numbers -- hey, I told you this was nerdy. There's the possibility of fame if you're computer discovers one. They've found three so far. And participants in PiHex (<http://www.cecm.sfu.ca/projects/pihex/pihex.html>) are using their collective computing power to calculate the forty trillionth bit of pi.

If numbers bore you, how does searching for space aliens sound? A project called SETI@home will use distributed computing to search for extra-terrestrial intelligence by analyzing data captured by the world's largest radio telescope. They haven't started yet, but you can get more information about the project at <http://setiathome.ssl.berkeley.edu>.

A complete list of Internet distributed computing projects is available at <http://www.mersenne.org>. Macintosh users should visit The Distributed Macintosh, a site that's dedicated to distributed projects that work on the Mac: <http://www.distributed-mac.net>.

To participate, you download a client for the project that you want to work on.

That client is a program that works on a portion of its task -- whether it's helping to compute pi, cracking encryption, or whatever -- then submits the result (which may take days to compute) to a central Internet server. You can leave the program running all the time. The computer works on it in its idle time -- when you need it for your work or play, you get its full attention as usual.

Participating in any of the projects doesn't involve much other than installing the software. Some projects (such as Distributed.net) are completely automated, fetching their work automatically from the Net. Others, like the effort to compute pi, require you to send an e-mail to a coordinator requesting a portion of the work.

Many participants in these efforts leave their computers on all the time to maximize their work. Devout participants have been known to wrangle additional computers. (I'll sheepishly admit that I have four computers working full time on the Distributed.net contest.)

Participating won't run up your Internet bill -- the client only needs to connect to the Internet to fetch work and later submit the results. The rest of the time you can be offline. But keeping your computer on all the time will increase your electric bill.

Using the Internet to share big computing tasks is in its infancy, but offers intriguing possibilities: for instance, some day, you may be able to trade computing cycles with other Internet users. If someone wanted to quickly render a complicated image, his computer might be able to dole out the work to your and other strangers' idle computers. Later, if you wanted to perform a particularly complex Internet search, you could enlist 10 anonymous machines to help get it done quickly. Today's distributed computing projects may be building that foundation. For now, it's just fun to participate in a novel project and have the possibility (however slight) of winning fame and fortune.

=*=*= SITES MENTIONED IN THIS ISSUE =*=*=

List of distributed computing projects: <http://www.mersenne.org>

Distributed Macintosh: <http://www.distributed-mac.net>

Distributed.net: <http://www.distributed.net>

Great Internet Mersenne Prime Search: <http://www.mersenne.org/prime.htm>

PiHex: <http://www.cecm.sfu.ca/projects/pihex/pihex.html>

SETI@home: <http://setiathome.ssl.berkeley.edu>

=*=*= THE END =*=*=

The NetAnswers Internet Extra is free to all CompuServe members. It's available in the Internet Community Forum -- GO INETCOM and look in file library 11, "NetAnswers".

Got comments or ideas for future issues? We want to hear 'em. Just send a message

to savetz@compuserve.com (74774,2725).

Copyright 1998 by Kevin Savetz.